ERIC Document Resume	See Instruction Sheet	DATE OF RESUME	DATE RECEIVED

A. PUBLICATION DATA

1. ERIC NUMBER	2. ORIGINATOR CONTROL NO(S).	3. IDENTIFICATION NO.	DO NOT WRITE IN SPACE BELOW
ED002677	N.A.	N.A.	

4. AUTHOR(S): Wallace, Helen M.

5. TITLE OF DOCUMENT ABSTRACTED: The Health of Children and Youth in Rural Areas

6. PUBLICATION TITLE: N.A.

7. EDITOR(S): N.A.

8. PLACE OF ORIGIN ORG. School of Public Health, University of California, Berkeley, ST. California CITY, STATE

9. PUBLISHER OR SOURCE National Committee for Children and Youth, 1145 19th St., N.W., Washington, D.C. 20036

TELE. EXT. INST/LOC CODE

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
N.A.	N.A.	9/63	16

MICROFILM COPY AVAILABLE YES ☒ NO ☐

COPYRIGHT GRANTED YES ☐ NO ☒

COPYRIGHT RELEASE FILED YES ☐ NO ☐

TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☐
FINAL ☒
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR Report

16. INDEXING TERMS (6-12)

migrant families	health services	preschool children	mothers
American Indian families	maternity patients	dental health	safety
handicapped children	accident prevention	health needs	nutrition
	newborn infants	rural youth	

17. ABSTRACT (MAX. 250 WORDS): The health status and health needs of mothers and children in the United States and of rural mothers and children in particular are summarized. Suggestions are given for improving health services. Illustrative data rather than a complete review of pertinent literature are presented.

Mortality rates among children, youth, and pregnant women in rural areas are higher than are those in urban areas. The quality of hospital care of mothers and children is poorer in rural areas. The amounts of medical and of preventive health care for children in rural farm families are lower than for urban families.

Preventive dental health measures are found less often in rural areas. There is need for increased safety education among farmers, for the accident rate in farming is the third highest of all major industries. Diets of some adolescents, particularly girls, and of some pregnant women are inadequate when measured by recommended standards. Development among the States of services for handicapped children is uneven, and urban handicapped children are serviced better than rural handicapped children.

Special problems related to migrant children are poor housing, lack of adequate health or sanitation facilities, no day care programs, lack of supervision while parents are working, hunger, and lack of knowledge about how to secure proper care. Special health problems associated with American Indian mothers and children are tuberculosis; venereal diseases; trachoma; vision and hearing impairment; anemia; and, among certain tribes, congenital hip dislocation.

Health services need to increase to keep up with increasing birth rates. Suggestions given for improving health services to rural mothers and children are: more funds, more trained personnel, and continuation of sound planning at State and regional levels.

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION	20. DIVISION OR DEPT.	21. CONTRACT NO. / PROJECT NO.
	22. TOTAL COST OF PROJECT	
	23. DURATION OF PROJECT	U.S. Department of Health, Education, and Welfare Office of Education

ERIC Form 1

ED002677

THE HEALTH OF CHILDREN AND YOUTH IN RURAL AREAS

by

Helen M. Wallace, M.D., MPH
Professor and Chairman
Division of Maternal and Child Health
University of California
School of Public Health at Berkeley

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education

This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

National Committee for Children and Youth
1145 Nineteenth Street, N. W.
Washington, D. C. 20036

JO854

THE CENTER FOR CULTURAL STUDIES
Adams State College of Colorado
Alamosa

THE HEALTH OF CHILDREN AND YOUTH IN RURAL AREAS

by

Helen M. Wallace, M.D., MPH
Professor and Chairman
Division of Maternal and Child Health
University of California
School of Public Health at Berkeley

Prepared for

The National Conference on Problems of Rural Youth
in a Changing Environment

September 1963

ED002677

THE HEALTH OF CHILDREN AND YOUTH IN RURAL AREAS

TABLE OF CONTENTS

	Page
Abstract	1
Introduction	1
Pertinent Background Information	1
Health Needs and Health Care of Maternity Patients and Newborn Infants	2
Special Problems of Rural Areas	5
Suggestions	7
Health Needs and Services for Infants and Preschool Children	7
Mortality	7
Morbidity	8
Health Supervisory Services for Infants and Preschool Children	8
Special Problems of Rural Areas	9
Suggestions	10
Health Needs and Services for Children and Youth of School Age	10
Mortality	10
Morbidity	10
Special Problems of Rural Areas	12
Suggestions	13
Dental Health	14
Special Problems of Rural Areas	14
Suggestions	15
Safety and Accident Prevention	15
Special Problems of Rural Areas	15
Suggestions	16
Nutrition	16
Suggestions	17
Health Services for Handicapped Children	17
Special Problems of Handicapped Children in Rural Areas	18
Suggestions	19
Migrant Families	19
Suggestions	20
American Indian Families	21
Suggestions	22
Footnotes	24

ABSTRACT

This paper summarizes some of the highlights describing the present health status and health needs of mothers and children in the United States. As each section is taken up, the special problems in rural areas are presented. Suggestions are made for next steps.

Pregnant women, and children and youth in rural areas all have higher mortality rates than exist in urban areas. Some evidence is available to indicate that the quality of hospital care of mothers and children is less adequate in rural areas. The amount of medical care provided children in rural farm families is lower, as is the amount of health supervisory (preventive) care. Dental health measures designed to prevent dental caries are applied less frequently. Some information is presented on the special problem of accidents in rural areas. In the nutritional area, evidence is available to indicate that the diets of some adolescents, especially girls, and of some pregnant women do not meet recommended standards. Services for handicapped children are unevenly developed among the States, and there is some evidence that handicapped children in urban areas receive more service. The special problem of children of migrant or American Indian families are summarized.

The birth rate is at a high level, and the number of children and youth has increased markedly. There is need for greatly increased services, merely to keep up with the increase in the number of children and youth in our present population.

INTRODUCTION

Official recognition of the special health problems of mothers and children in rural areas in the United States has existed since 1935, the year of enactment of the Social Security Act. When the Act was originally passed, Title V, which contains the provisions for maternal and child health, crippled children and child welfare services, recognized the disadvantaged position of mothers and children in rural areas, and required that increased assistance be given to those States having a higher proportion of rural births and rural children. Sections One and Two of Title V at present still make these special provisions for maternal and child health and crippled children services for rural areas.

It is evident from the material presented in this paper that mothers and children in rural areas have most, if not all, of the health problems and needs of those in urban areas. But, mothers and children in rural areas have additional health problems and needs as well, related to such factors as less ready access to medical and health resources, sparseness of the population in many areas, transportation difficulties, and the lack of adequate provision for certain groups with unique needs, such as migrant families.

This paper presents information to answer three major questions:

1. What are the major health needs of mothers, children, and youth?
2. In addition, what are the special health needs of mothers, children, and youth in rural areas?
3. What suggestions can be made to assist in improving health services for mothers, children, and youth in rural areas?

The data presented in this paper have been selected for illustrative purposes, and are not intended to be a complete review of the literature on the subject.

PERTINENT BACKGROUND INFORMATION

The birth rate in the United States has generally followed the marriage rate. Birth rates increased rapidly in the 1940's to a high of 25.0 in 1957. Since 1957 there has been a slow decline in the birth rate to 22.4 per 1,000 population. The number of births annually is about 4.2 million. The number of babies added to the United States population during the 1950's was greater than for any previous decade in the Nation's history. This high birth rate has meant increased demand upon the health resources which render care to maternity patients and newborn infants.

Since the turn of the century there has developed a tendency to marry earlier and have the first baby sooner after marriage. The median age of mothers fell from 23.0 years at the birth of the first child in 1940 to 21.4 years in 1961. Little change has occurred in the last decade. However, the younger ages at marriage has increased needs for premarital and marital counseling and supportive services.

In the last several decades there has been an increase in the average size of the American family.

As a result of the fertility pattern established since World War II, there are three major demographic developments of significance: (1) The larger number of babies born since World War II have placed enormous demand upon the health, education, and welfare services for children. (2) Since most of the postwar babies will reach maturity and eventually marry, the number of annual marriages by 1970 has been estimated at about 2.1 million compared with 1.5 million at present. 1/ (3) The increased numbers of people entering marriage will generate another increase in the number of children born, placing an even greater demand upon health, educational, and welfare services for children.

Children under five years of age doubled in number between 1940 and 1960, from 10.5 to 20.3 million and from 8 per cent to 11.3 per cent of the total population. Children 5 to 14 years of age totaled 22.4 million in 1940 and 35.5 million in 1960, from 17.1 per cent to 19.7 per cent of the total population. Youth 15 to 19 years totaled 10.6 in 1950 and 13.2 million in 1960. As a whole, children and youth under 20 years of age numbered 45.3 million in 1940, 51.1 million in 1950, and 69.0 million in 1960. According to projections, this number will increase to about 87 million in 1970 and to 109 million in 1980.

The significance of these demographic data is that there has been and will continue to be a high demand for health services for mothers and children in the United States--for maternity care, for health supervision and medical care services for infants, preschool children, and for children and youth of school age, for handicapped children, and for health services for children in day care centers, foster homes, institutions, camps, etc.

HEALTH NEEDS AND HEALTH CARE OF MATERNITY PATIENTS AND NEWBORN INFANTS

Considerable progress has been made in improving maternity and newborn care in the United States in the last three decades. One of the significant steps has been the increase of deliveries in hospitals. In 1960, 97 per cent of all deliveries occurred in hospitals; 99 per cent of the deliveries of all white infants were in hospitals, while only 85 per cent of all nonwhite infant deliveries occurred there. Major factors accounting for the high percentage of hospital deliveries include the recognition that the hospital is a safer place for childbirth than the home, the increased availability of hospital facilities through the Hill-Burton Hospital Construction Program, and the increased usage of prepaid health and hospital insurance.

There has been a significant increase in the number and rate of out of wedlock pregnancies. In 1960, 5.7 per cent (a total of 224,300) of all babies born alive were out of wedlock births; 2.3 per cent of all white babies and 23.3 per cent of all nonwhite babies were born out of wedlock. Sixty three percent of the illegitimate births reported in 1960 were to nonwhite mothers and 37 per cent were to white mothers. Furthermore, there were 91,700 illegitimate births to teenage girls in 1960; of this number,

48,300 were girls of school age. Not only is the problem of illegitimacy one of great social significance, but also there are important health aspects; a higher proportion of out of wedlock births are premature, and the infant mortality rate for infants born out of wedlock is twice that for infants born in wedlock. Furthermore, the increased rates of prematurity and infant mortality are associated with lack of prenatal care. 2/

There has been considerable reduction in maternal mortality in the United States in the past three decades. In 1958-59, the maternal mortality rate was 3.8 per 10,000 live births. However, the mortality rate for nonwhite women (10.2) was approximately four times that for white women (2.6). Major factors accounting for the reduction in maternal mortality include: (1) the study of maternal deaths by community maternal mortality committee and the use of such data for educational purposes with physicians and hospitals; (2) introduction of sulfa drugs and antibiotics to prevent deaths due to infection; (3) wider usage of blood and blood substitutes to prevent deaths due to hemorrhage; (4) increased use of hospitalization for maternity patients; and (5) the slow and gradual improvement in the quality of antepartum and intrapartum care. Nevertheless, the evidence is clear from studies by community maternal mortality committees that the irreducible minimum in maternal mortality has not been reached. These studies indicate that one-quarter to three-quarters of maternal deaths probably are preventable. The significance of maternal mortality is of course not only the death of the individual, but also the potential breakup of the family since the woman is the wife, the mother, and the homemaker for the family.

Considerable reduction has occurred in perinatal mortality*. In 1959 the perinatal mortality rate was 34.6 per 1,000 live births, of which 15.9 was fetal and 19.0 was neonatal. However, the perinatal mortality rate for nonwhites was 53.5 compared with 31.2 for whites. From community studies it has been determined that from 7 per cent to 48 per cent of perinatal deaths have been considered preventable. Approximately 115,000 perinatal deaths occur annually in the United States; over and above this number of deaths is the large number of infants and children who survive but who have disabling conditions due to prenatal and perinatal causes. These conditions include mental retardation, cerebral palsy, epilepsy, congenital malformations, other birth injuries, and other evidence of neuromotor and sensory disorders. The large extent of human wastage due to prenatal and natal causes, resulting in mortality and morbidity, indicates that measures are urgently needed to improve the quality and quantity of preconceptional, antepartum, intrapartum, and neonatal care throughout the United States. The prevention of perinatal casualties represents one of the major health problems in our country at the present time. Both obstetric and pediatric approaches will help in reaching this objective.

---

* The definition of perinatal mortality is a combination of late fetal mortality and neonatal mortality, using the classification recommended by the Committee on Maternal and Child Care of the American Medical Association.

Certain women are likely to have an unfavorable outcome of pregnancy. These "high risk" groups include the following: those with a history of complications or unfavorable outcomes in previous pregnancies; those with a complication in a current pregnancy; those who have received no prenatal care or delayed prenatal care; those from the lower socio-economic groups, including those who are recipients of the various public assistance programs; those pregnant out of wedlock; those residing in communities without access to medical and health care of reasonably good quality; those with social or emotional problems; those under 20 years of age, or over 30 years of age who have had five or more pregnancies; those who are undernourished; those who are newcomers to a community; and those with a family history of a genetic condition. Intensive efforts are necessary to identify these high risk women, and to concentrate attention on them. 3/ This represents one of the major approaches to further reduction in perinatal mortality and morbidity.

Because almost all infants in the United States are now delivered in hospitals, the quality of hospital care of mothers and newborn infants is an important factor in survival of mother and baby. It is for this reason that national professional organizations, primarily the American College of Obstetricians and Gynecologists 4/ and the American Academy of Pediatrics, 5/ have established recommended standards for the hospital care of maternity patients and newborn infants. State and local health departments have been quick to adopt them, sometimes with variations, in individual states. Some states and a few of the larger local health departments have provided teams of consultants to hospitals, in an effort to assist in improving the quality of maternity and newborn care. It is probably fair to state that, at present the problem of the quality of medical care has been the one which has been tackled least successfully; the quality of medical care is, of course, frequently the crux of patient survival.

Within the United States, the increase in population may for some families mean increased stress in family life, reduction of educational opportunity, and retardation of the industrial development on which a nation's rising standard of living depends. No problem can be effectively solved today, if tomorrow's population increases out of proportion to the resources available to meet those problems. Patterns of family life directly affect human health and individual capacities. Serious public health problems are faced when family size impairs ability to sustain a healthful way of life, when childbearing may affect adversely the health of the mother and her offspring, and when the cultural and spiritual aspirations of the family are frustrated by sterility. It is for these reasons that health workers have become interested and are becoming involved in providing family planning services in communities. One example of a rural program has been reported by Fritz 6/ in Virginia, which is a cooperative program of the State and local health departments, and the State League for Planned Parenthood, serving a two-county population of 50,000. Family planning is included in all public health programs where indicated -- such as the tuberculous patient of child bearing age, the mother of the handicapped child, or the mental hygiene clinic patient -- in addition to patients receiving services in the maternal and child health field. Patients are visited at home by public health nurses. Of the fami-

lies visited, 85 per cent were definitely interested in family planning. While interested, only 50 per cent had used family planning methods in the past. More than 45 per cent of the information received on family planning in the past had been inadequate, and the method, when used, satisfactory from the patient's viewpoint in only 25 percent of the cases. Sources of family planning information were friends or relatives (40 per cent), clinics (28 per cent), physicians (10 per cent), literature, drugstore, midwives (22 per cent). The need for incorporating family planning services into public health programs is apparent.

SPECIAL PROBLEMS OF RURAL AREAS

It is clear from Table 1 that women residing in the nonmetropolitan counties of the United States, especially the rural areas, have a higher material mortality rate. The highest rates are found in the East South Central, the West South Central, the South Atlantic, and Mountain regions. Furthermore, infants delivered in nonmetropolitan counties have higher neonatal mortality rates (Table 2). It has been amply demonstrated that women delivering in smaller hospitals (which are located to a large extent in smaller communities) are at a disadvantage. A few studies will be cited for illustrative purposes.

Barno, et. al., reporting a study of maternal mortality in Minnesota in 1950-1954 found that the maternal mortality rate in the four largest cities was 0.9 per 10,000 live births, while the rate was 2.3 in the remainder of the State. 7/

Knudsen, et. al., in Minnesota and Donnelly in Iowa 9/ have studied the problem of anaesthesia for maternity patients on a state-wide basis. Both studies found similar facts; to quote from the Donnelly report: "approximately one-half of all deliveries occurred in hospitals with less than 130 beds, most of which are located in rural areas where there are relatively few anaesthesiologists, and a limited number of formally trained nurse anaesthetists, placing the burden of nursing anaesthesia for obstetrical patients upon lesser trained personnel."

Donnelly 10/ in a study of prenatal care in Iowa found that the smaller the hospital maternity service (as classified by the annual number of deliveries), the lower the percentage of pregnant women who registered for prenatal care in the first trimester of pregnancy. For example, in hospitals performing 1,000 and over deliveries per year, 75.9 per cent of the women registered for prenatal care in the first trimester of pregnancy; in hospitals performing 100 deliveries or less per year, the corresponding percentage was 52.6 per cent.

In a study of neonatal mortality in hospitals in New York State, Yankauer 11/ found that hospitals with an annual birth volume of 500 or more have significantly lower neonatal mortality rates than hospitals with smaller maternity and newborn services, and their rates have declined more than those of hospitals with smaller services, Shackelford, et. al., 12/ has reported essentially the same findings for hospitals in Oklahoma in regard to perinatal mortality.

It seems evident from the above illustrations that maternity and newborn care is at a disadvantage in smaller communities. Factors of importance include the quality of staff, equipment, and facilities in smaller hospitals; the nonavailability of medical specialists on an emergency basis; the nonavailability of resident staff; geographic accessibility and transportation; the nonavailability of prenatal clinics in rural areas.

Table 1. MATERNAL MORTALITY RATES BY SIZE OF COUNTY FOR RURAL AND URBAN POPULATIONS, UNITED STATES, 1958 - 1959.

	Urban	Rural	Total
All Counties	3.6	4.0	3.8
Metropolitan Counties	3.6	2.6	3.3
Nonmetropolitan Counties	3.7	4.9*	4.4

*Highest rates are:
East South Central - - 8.0
West South Central - - 6.9
South Atlantic - - - - 6.3
Mountain - - - - - - - 4.8

Source: National Vital Statistics Division, Public Health Service. Maternal Mortality: United States and Each State, and Hawaii, Puerto Rico, and the Virgin Islands, 1959. Vital Statistics - Special Reports. National Summaries. Volume 54, Number 6, October 18, 1961. U.S. Government Printing Office, Washington, D. C. 1961. Pages 157-166.

Table 2. MORTALITY RATES BY AGE LEVELS FOR METROPOLITAN AND NONMETROPOLITAN COUNTIES, UNITED STATES, 1959.

Age Group	Metropolitan Counties	Nonmetropolitan Counties
Infant	23.7*	30.9*
Neonatal	17.7*	21.1*
Postneonatal	6.0*	9.8*
1 - 4 years	89 **	133 **
5 - 14 years	39 **	57 **
15 - 24 years	83 **	141 **

* per 1,000 live births
** per 100,000 population

SUGGESTIONS

The following suggestions are offered in an effort to improve maternity and newborn care in rural areas:

1. Provision of more hospitals in those rural areas with a high percentage of nonwhite population. This includes not only the provision of the facility, but also making it easily available to nonwhite families of low socio-economic status.

2. Further concentration on the problem of illegitimacy -- in relation to both prevention and care and rehabilitation. Preventive steps include intensified efforts in family life education, early recognition of children with behavior difficulties in the preschool and early school periods, and increased mental health and family services. Treatment and rehabilitative steps include early identification of the out of wedlock pregnant girl, intensification of health and social services for her and for her family and partner (including improved maternity care), and improvement of the health and social services provided in maternity homes.

3. Improvement in the quality of hospital care of maternity patients and newborn infants in rural areas. Strengthening of hospital consultation programs provided by health departments to rural hospitals, with special reference to the quality of medical care. This includes regional or district planning for the provision of obstetric and pediatric consultant services to rural hospitals for patient care and for professional education.

4. Increased concentration of services for high risk groups of women.

5. Provision of prenatal clinics in rural areas, where indicated, to make prenatal care easily accessible to women for whom it is not now easily available.

6. Incorporation of family planning services into public health programs.

HEALTH NEEDS AND SERVICES FOR INFANTS AND PRESCHOOL CHILDREN

MORTALITY

The postneonatal mortality rate (in infants aged one through eleven months) has declined markedly in the United States, much more rapidly than the neonatal mortality rate. In 1958 it was 7.6 per 1,000 live births; however, the rate among nonwhites was 16.7 in contrast to 6.0 for white infants. The major causes of postneonatal mortality are influenza and pneumonia, congenital malformations, gastrointestinal infections, and accidents. With the exception of congenital malformations, all of these major causes are related

to the infant's home environment, are preventable, and should be favorably affected by continuous health supervision.

The mortality rate among preschool children (aged 1 - 4 years) has also declined markedly in the United States; much of the decline has occurred in the area of infections and communicable disease. In 1958, the mortality rate among nonwhite children was approximately twice that of white children. The major causes of preschool mortality are accidents, respiratory tract infections, congenital malformation, cancer and leukemias, and infections of the gastro-intestinal tract. Four of them (all except the malignant diseases) have preventable elements in them and should be favorably affected by continuous health supervision.

MORBIDITY

Information is available from two morbidity studies of children. The California Study of Illness 13/ in 1954-55 revealed that the most frequent types of illness in children under five years of age were diseases of the respiratory system, accidents, and diseases of the digestive system. The California Study showed that 91 per cent of the children under five years of age were reported by the mothers to have at least one "problem with behavior" of any degree, and 64 per cent had behavior of intermediate or serious concern.

Information available from the U. S. National Health Survey of 1957-58 14/ indicated that acute illness and injuries were most common in children under five years of age, who averaged four acute illnesses or injuries annually. The most common conditions were similar to those reported in the California Study. Children under five years of age had the most frequent number of physician visits per person per year (6.4 visits); 68 per cent of the visits were for diagnosis and treatment, 15 per cent for immunization, and 12 per cent for general checkup. The higher the family income, the larger the number of physician visits.

HEALTH SUPERVISORY SERVICES FOR INFANTS AND PRESCHOOL CHILDREN

Health supervisory services for infants and preschool children represent one of the major preventive approaches in the health field. Their purposes are to keep well children well, to guide parents in child-rearing, to apply known effective preventive techniques, to identify infants and children with adverse health conditions and to refer them for medical care. The health supervisory service provided for infants and children on an organized basis in communities is the well child conference. Data on this program in 1937 and 1959 in the United States are as follows:

Age Group	Per Cent of Total Population Covered	
	1937	1959
Infants	6	20
Preschool Children	2.2	6.6

While the percentage of both infants and preschool children covered through well child conferences tripled from 1937 to 1959, nevertheless, the coverage for preschool children is still extremely small.

SPECIAL PROBLEMS OF RURAL AREAS

The mortality rates during the postneonatal and preschool periods are 50 per cent higher in non-metropolitan counties than in metropolitan counties (Table 2).

In the U. S. National Health Survey in 1957-58 14/, physician visits per child per year for children under five years of age were lowest in rural farm families (4.5 visits), next lowest in rural nonfarm families (6.1 visits), and highest in urban families (7.0 visits). This information is similar to that found in 1946 by the American Academy of Pediatrics 15/; in the 1946 study, children in isolated counties received one-third less medical care than those in or near cities, with major deficiencies in the amount of care by specialists, hospitals, and clinics. The availability of practicing physicians was markedly less in isolated counties. The metropolitan counties were better supplied with hospital beds for children than rural counties. The quality of hospital care for children was lower in rural counties. Little outpatient care was provided for children by hospitals, except in metropolitan counties. Well child conferences were held predominantly in metropolitan counties. Although one third of all counties had no public health nursing services, more of these services were provided for children in metropolitan counties. The preschool child received less health supervision away from the cities.

Further evidence of the need to strengthen health supervisory services for infants and preschool children was found from a survey of parents, carried out by the Iowa Congress of Parents and Teachers, in Webster City, Hamilton County, Iowa in June 1960. It was found that while 80 per cent of infants had had a general health checkup in the previous three months, 18 per cent had not. While 70 per cent of preschool children had had a general checkup since their first birthday, 30 per cent had not. The parents of 71 per cent of infants and 44 per cent of preschool children reported that nutrition had been discussed by the physician, the parents of 43 per cent of infants and 35 per cent of preschool children reported that behavior had been discussed, and the parents of 16 per cent of infants and 18 per cent of preschool children reported that accident prevention had been discussed. Seventy per cent of infants had had DPT, 32 per cent had had smallpox vaccine, and 67 per cent had had poliomyelitis vaccine. The percentage of preschool children having booster injections against these diseases was low.

It is evident from the foregoing data that, in general, infants and preschool children in rural areas have more serious health problems, but fewer resources to prevent or care for them.

SUGGESTIONS

1. We need to strengthen, expand and improve health supervisory services for infants, and preschool children. In so doing, much more more emphasis is needed for care and treatment among:

   a. Infants and preschool children in low income families;
   b. Infants and preschool children in rural areas;
   c. Infants and preschool nonwhite children;
   d. Preschool children in general.
   e. And in relation to immunization, accident prevention, and anticipatory guidance regarding behavior.

2. There is need to strengthen, expand, and improve services provided by specialists, hospitals, and clinics in rural areas.

HEALTH NEEDS AND SERVICES FOR CHILDREN AND YOUTH OF SCHOOL AGE

MORTALITY

Mortality among children and youth (in the age groups 5 - 14 years and 15 - 24 years) has decreased significantly. The major causes of death among children aged 5 to 14 years in 1958 were accidents, cancer and other malignant diseases, congenital malformations, influenza, pneumonia, rheumatic fever, and heart diseases. In the age group 15 to 24 years, the major causes are accidents, cancer and other malignant diseases, homicide, suicide, and diseases of the heart. An effective school health program should have a favorable effect in further reducing the mortality from all of the causes listed above except in the case of the malignant diseases.

MORBIDITY

Data from the U. S. National Health Survey in 1957-58 indicate that respiratory diseases, infections and parasitic diseases, injuries and digestive conditions make up the acute conditions in the 5 - 14 and 15 - 24 age group, and were the major causes of loss of school days. School chidren 5 - 14 years of age and youth 15 - 24 years of age had fewer acute conditions per person per year (3.5 and 2.7 respectively) than infants and preschool children. Thirty-six per cent of the impairments in children ages 0 - 14 years were orthopedic, 26 per cent speech, 15 per cent hearing, and 8 per cent visual; youth aged 15 - 24 years had more orthopedic impairments (59 per cent) and fewer speech impairments (8 per cent). Children aged 5 - 14 years had the lowest number of physician visits per person per year (3.9 visits) followed by youth 15 - 24 years (5.0 visits). As in the infant and preschool group, most physician visits were for diagnosis and treatment and not for preventive services, and the higher the family income, the more physician visits made.

It is estimated that there are over 9 million children under 15 years of age with one or more chronic conditions, of whom about 750,000 have some limitation of activity and 150,000 some limitation of mobility. An effective school health program should be able to detect these conditions, and pro-

vide the necessary counseling, referral, and followup services for the correction of remedial health problems.

Still another way of looking at illness in children of school age and youth is to review Selective Service data. 16/ Approximately 44 per cent of all men aged 18 to 37 years examined for service in the Armed Forces in 1944-45 were rejected. The leading causes for rejection in 1944 were mental disease, 26.8 per cent ; failure to meet minimum intelligence standards, 12.8 per cent; musculoskeletal defects, 8.8 per cent; cardiovascular defects, 8.0 per cent; hernia, 4.9 per cent; ears, 4.4 per cent; neurological disorders, 4.1 per cent; eye defects, 4.0 per cent; tuberculosis, 3.4 per cent; and mental deficiency, 2.6 per cent. It is evident from this list of major causes that a considerable percentage of the men had conditions which were remediable. During 1961, only 50.9 per cent of all men in draft age were found acceptable for military service. 17/ An effective school health program, it is felt, should be able to detect adverse health conditions in children and youth, and provide the necessary counseling, referral, and followup services so that they will be brought under care, and, where correctible, will be corrected.

Adolescence is a period of increased concern and stress. 18/ The individual experiences rapid growth and frequently may be worried about growth and changes in his body. Obesity may be a problem. Furthermore, because of increased growth, there are increased nutritional needs. There may be injuries of growth centers of certain vertebrae and long bones. The adolescent may complain of fatigue. Acne and menstrual disorders are common problems. Over and above these concerns in physical health, psychological problems may exist as well - changing feelings about sex, parents, fear of being different, the need to become independent, fear of school failure, concern about a career and marriage, worry about being accepted and being popular, etc. The school health program has a unique opportunity to play an important role in adolescent medicine through showing interest in adolescents and their problems; providing them with a chance to talk through their problems; offering them a confidential relationship; providing appraisal, counseling, and referral of health problems; and through education of parents.

One of the more recent areas of concern to public health workers is the rising incidence of venereal disease among teenagers. 19/ For example, reported early infectious syphilis among the 15 - 19 year age group rose from 1,093 cases in 1956 to 2,577 cases in 1960, an increase of 136 per cent. For the same period and among the same age group, the numbers of reported gonorrhea cases rose from 44,284 to 53,649, an increase of 21 per cent. In 1960, 61,265 cases of infectious venereal disease (primary and secondary syphilis and gonorrhea) were reported among persons under 20 years of age. To put this another way, in 1956 the infectious syphilis rate among the 15 - 19 year age group was 10.1 per 100,000 population; in 1960 it was 19.4 per 100,000 population, an increase of 92 per cent.

In general, teenage venereal disease is associated with sexual promiscuity, illegitimacy, and juvenile delinquency. Teenage venereal disease is a symptom of an underlying social illness. The majority of infected teen-

agers are from the least-privileged segments of the population, but a steadily rising number are from better homes. More than ever today, public health authorities stress the preventive approach - through the home and community insitutions that help mold the character of young people. There is agreement that parents have a central responsibility - to give their children the emotional stability that safeguards them in their teenage relations with one another.

National data on activities in school health programs also point to other areas where such programs require strengthening. For example, in 1959 there was a decrease of 5.3 per cent in the number of children having a school health examination by a physician. 20/ Less than one-quarter of the children examined had their parent present. Only 45.2 per cent of the children examined had their referrals completed, indicating a need for further followup. In 1959, there was a significant increase in the number of school children who received visual screening or audiometric testing; however, after visual screening only half of the children had their referrals completed, and after audiometric screening less than half had their referrals completed.

SPECIAL PROBLEMS OF RURAL AREAS

The mortality rate in children 5 - 14 years of age in nonmetropolitan counties is 50 per cent higher than that of children in metropolitan counties. In the 15 - 24 year age group, the rate in nonmetropolitan counties is almost double that in metropolitan counties (Table 2).

In the U. S. National Health Survey in 1957-1958, in both age groups (5 - 14 and 15 - 24 years), the number of physician visits per person per year was lowest in rural farm groups, next lowest in rural nonfarm groups, and highest in the urban groups.

In the study of children in Webster City, Iowa, previously referred to, only 73 per cent of the children aged 6 - 12 years and 67 per cent of those aged 12 - 18 years had had a general health checkup within the last four years. Nutrition was discussed with 42 per cent of the 6 - 12 year group and with 32 per cent of the 13 - 18 year group; behavior with 31 per cent of the 6 - 12 year group and 20 per cent of the 13 - 18 year group; and accident prevention with 19 per cent and 15 per cent respectively. Booster inoculations in the two groups ranged from 54-80 per cent in the 6 - 12 year group and from 59-67 per cent in the 13 - 18 year group, varying with the individual disease. It is of interest that 72-78 per cent had had a vision test during the previous year. While 76 per cent of the 6 - 12 year group had had a hearing test during the previous year, this was true for only 47 per cent in the 13 - 18 year group.

In 1958, a study was done of 112 children entering kindergarten and the first grade in Sierra County, California. 21/ It was found that, while 80 per cent had received their primary DPT immunization, only 32 per cent had received booster immunizations. About 47 per cent of the children had seen their physician for some reason within the preceding eight months; about 68 per cent had seen him during the preceding 20 months; however, only 23 per

cent of those who indicated they had a personal physician made regular visits to him. Ten of the 18 children who were without a personal physician were found to have some physical abnormality, including vision or hearing problems. Parents of 59 children were given recommendations to seek additional care for their children; fifteen months later, half of these children still needed specific treatment or continued followup.

In 1958-59, an interdisciplinary team from the University of Minnesota School of Public Health and the Minnesota State Departments of Health and Education conducted a study of the school health program in Austin, Minnesota, a community of 30,000 population. 22/ The study revealed areas in which steps were indicated to strengthen the program, including medical and dental supervision; supervision of the school nursing staff and program; inetgration of the program with the public health program in the community; in-service training of staff in health subjects; teacher observation and the periodic teacher-nurse conference; interchange of information with the child's physician; safety and accident prevention (reporting of all accidents and strengthening of supervision on the playground during the lunch period); handicapped children; the dental program (dental health instruction, fluoridation); the nutrition program (health instruction and the diet of teenagers, especially girls); the health instruction program (use of more recent materials and of a planned sequential curriculum based on major health problems in children); and the environmental aspects of the school plant.

SUGGESTIONS

Suggestions to improve the school health programs for children and youth in rural areas include the following:

1. More evaluative reviews and studies of school health programs are needed in the smaller communities.

2. Administrators need to establish priorities for such programs, based upon the major health problems of children and youth today in individual communities.

3. We should apply all known effective preventive measures in school health programs - e.g. - immunizations, fluoridation, rheumatic fever prophylaxis, etc.

4. Besides school programs, we need to strengthen community health resources, to which children and youth with identified health problems may be referred for care.

5. School health program should be integrated and coordinated with the community's total public health program.

DENTAL HEALTH

Dental caries, periodontal disease, and malocclusion are common conditions in childhood and youth. Dental caries may become manifest in the deciduous (temporary) teeth soon after their eruption, and it is almost universal by school age. Untreated dental caries leads to loss of teeth. Premature loss of the deciduous teeth and especially of the first permanent molars is a major cause of dental malocclusion. Early and regular dental treatment is necessary during the preschool period, as well as during the periods of childhood, adolescence and later life.

There is ample evidence that reduction in dental caries of about 60 per cent in childhood can be achieved in communities with fluoride-deficient water supplies by adjusting the fluoride concentration to one part per million, without any demonstrable systemic effects of any kind. By the end of January 1961 the number of communities that had added fluoride to their water supplies was 1,968 and the population served was 38,500,000. In addition, some 7 million people live in communities with a natural fluoride content of 0.7 or more parts per million of water. Thus 45.5 million people - less than one-fourth of the U. S. population - live in areas benefiting from fluoridated water. In addition to fluoridation, other comparable methods of caries prevention are application of sodium or stannous fluoride solutions to the teeth, the use of dietary fluoride and the use of a stannous fluoride toothpaste. These measures, however, are not as effective as fluoridation.

According to the U. S. National Health Survey, young persons aged 15 to 24 years visited the dentist most frequently of any age group; next in frequency were children 5 to 14 years of age. Filling of teeth was the largest single type of dental service provided. Nine per cent of children aged 5 to 14 years were receiving orthodontic care. While approximately one-half of the persons aged 5 to 14 years had seen the dentist during the year, 28 per cent had never visited the dentist. More frequent dental visits went with higher incomes.

SPECIAL PROBLEMS OF RURAL AREAS

In the U. S. National Health Survey, it was found that children and youth in rural farm areas had the lowest number of dental visits per person per year; children in rural nonfarm areas had the next lowest number of visits.

Fluoridation has been accepted more in larger communities than in smaller ones. Thus, by the end of 1959, 61 per cent of all communities with population over 500,000 had fluoridated water. The comparable figures in smaller communities were: 500,000 - 100,000,35 per cent; 100,000 - 10,000, 34 per cent; under 10,000 , 8 per cent.

Thus, the evidence is clear that children and youth in rural areas are at a disadvantage, from the viewpoint of dental health.

SUGGESTIONS

1. There is need for increased emphasis on fluoridation of community water supplies. In the absence of this, alternate measures of fluoride use are necessary.

2. Dental health education of parents and children needs increased emphasis.

3. The importance of continuing dental care of children and youth beginning in early childhood needs increased emphasis. Community resources for such care can be developed.

SAFETY AND ACCIDENT PREVENTION

Accidents are the first cause of death among individuals aged one to thirty-five years at the present time in the United States. For children under five years of age, the most frequent types of accidental deaths are motor vehicle, burns, drowning, falls and poisons; three-quarters of all these deaths occur at home. In children aged 5 to 14 years, the most frequent types are motor vehicle, drowning, burns, firearms, and falls. For youth aged 15 to 24 years, the most frequent types are motor vehicle, drowning, firearms and railroad accidents. Since 1900 the death rate due to accidents has gradually decreased among children under 15 years of age, although a plateau in mortality has existed since 1955. There has, however, been no decrease in mortality due to accidents among persons 15 to 24 years of age during this period.

As important as is the problem of mortality in children and youth due to accidents, nonfatal accidents also are frequent. According to the U. S. National Health Survey, approximately 23.4 million persons under 25 years of age received injuries that caused them to seek medical attention or to restrict their normal daily activities for at least a day, during the year ending June 1958. About one-third of the children and youth under 25 years of age are injured annually. Home accidents are the chief cause of injuries among children under 15 years of age. For young people 15 to 24 years of age, motor vehicle, work accidents and home accidents are of major importance.

SPECIAL PROBLEMS OF RURAL AREAS

Each year in the United States, more than 3,000 farm workers are killed in accidents while working. This is an average of more than ten fatalities per working day. In addition, almost a hundred times as many suffer permanent physical impairment, and many of these injuries are extremely serious. Data for 1961 show that there are 8,700 fatalities among farm residents from accidental causes. Of these, 3,500 involved motor vehicles, and 2,100 occurred in the farm home. Accidents at work accounted for 2,700 deaths, and public nonmotor vehicle accidents accounted for 900 fatalities.

Nearly 1 million farm people were injured as a result of accidents in 1958; 170,000 of these involved the motor vehicle; 400,000 occurred in the farm home; 300,000 as a result of work; and 100,000 in public nonmotor vehicle accidents.

The death rate in farm work was third highest of all of the major industries, being exceeded only by the extractive industries and construction. It is six times safer to work in a factory than on a farm because factories have supervision, training, enforcement, and insurance. Farmers generally lack safety supervision, training, and enforcement. There is great need to reach farm people through education.

In a more recent study of persons injured in the home by the U. S. National Health Survey in 1959-1961, the rate of injury was highest in rural nonfarm areas. The proportion of persons injured outside the house was found to be highest in rural farm areas. 23/

SUGGESTIONS

1. The need to increase safety education among farm workers. Measures include the use of a local safety council including the various farm groups and organizations. Specific areas to be tackled include highway safety, accidents in the farm home (especially falls and fire), poisons, work accidents, especially farm machinery, and public recreation.

2. The need to strengthen school safety programs, including reporting of accidents, periodic inspection of the school plant to assure a safe environment for children, fire drills, transportation to and from schools, traffic control around school areas, bicycle and driver training, school safety patrols, and a student safety organization. Safety education of children and their parents is a fundamental activity.

3. Special concentration on the problem of home safety in farm homes, because of its importance in childhood.

NUTRITION

The overall nutritional status in the United States in 1959, was rated as good. 24/ The average nutrient intakes by both boys and girls up to age 12 in all regions was estimated to be adequate, except that the calcium intake of girls was slightly low. Food eaten by males aged 13 to 30 years provided, on the average, adequate amounts of all nutrients except Vitamin C, but females in this age range had food adequate in only three nutrients - Vitamin A, riboflavin, and niacin. The average intakes of the other nutrients by the girls were either seriously low, as for calcium, iron, thiamine, and ascorbic acid, or borderline low, as for calories and protein. The diets of the teen-age girls presented the least favorable picture of all those examined.

There is evidence that nutritional status in pregnancy also requires improvement. In a study of 404 pregnant women in Iowa, Stearns found 25/ that only 37 ingested more than 75 per cent of the amount listed in the National Research Council's Recommended Dietary Allowances for each of the 10 nutrients studied. The diets of 110 women were classed as poor and 76 were classed as very poor. Forty-four per cent of the entire group of 404 women was classed as poorly nourished. Three per cent of the 227 women with fair to excellent dietary habits had premature infants. In contrast, 10 per cent of the 177 women in the poorly nourished group had premature infants. The women in the fair-to-excellent diet group all had infants in good condition, whereas, the women in the poor diet group had one stillborn infant, and four with severe congenital anomalies.

SUGGESTIONS

1. There is need to concentrate special attention on the diet of adolescents, especially the girls.

2. There is need to improve the nutritional status of some pregnant women.

3. Intensive educational effort in nutrition is indicated among school children, teen-agers, married couples who are potential parents, and among parents.

4. Certain minority groups, such as the Spanish-Americans and Indians, also deserve high priority.

HEALTH SERVICES FOR HANDICAPPED CHILDREN

Health services for handicapped children have undergone considerable expansion and improvement since the enactment of the Social Security Act in 1935. The number of children covered by State Crippled Children's Programs has increased from 110,000 in 1937 to 355,000 children in 1960, and the extent of coverage has doubled from 2.4 per 1,000 children under 21 years of age in 1937 to 4.9 in 1960. 26/ Furthermore, the definition of a handicapped child has been broadened by many State Crippled Children's Programs. Almost all States now include children with many types of congenital malformations, orthopedic conditions, cerebral palsy, burns and other disability associated with accidents and trauma, birth injuries, and tuberculosis.

However, there is still limitation in the breadth of coverage of some types of handicapped children by some State Crippled Children's Programs, as evidenced by the following:

Diagnostic Condition	Number of States Which Include Diagnosis 26/
Congenital cataract	22
Deafness and impairment of hearing	33
Other diseases and conditions of ear and mastoid process	30
Refractive errors	15
Strabismus	24
Other diseases of eye	30
Epilepsy	32
Rheumatic fever, acute	35
Chronic rheumatic heart disease	38
Other disease of heart, except congenital malformations	31
Disorders of occlusion, eruption and tooth development	26
Other diseases of buccal cavity and esophagus	18
Diabetes mellitus	12

Children with sensory disorders, epilepsy, rheumatic fever and heart disease, dental and dento-facial conditions, and such long-term conditions as diabetes are not included in all States. Furthermore, children with emotional disorders are usually excluded, and many State programs exclude mentally retarded children.

The number of handicapped children in the United States is large. For example, from the U. S. National Health Survey in 1957-58, it was estimated 27/ that 9,200,000 children (17.5 per cent of the population under 15 years of age) have one or more chronic conditions. Chronic activity limitation affected approximately 744,000 children (1.4 per cent of the population under 15 years of age). Thus, while much progress has been made, much remains to be done from a quantitative point of view. Furthermore, there is evidence of unevenness in the quality of care.

SPECIAL PROBLEMS OF HANDICAPPED CHILDREN IN RURAL AREAS

Handicapped children residing in rural areas are still at a disadvantage regarding services available to them, as compared with children in urban areas. Data from a recent study of cerebral palsied individuals in Minnesota 28/ are used for illustrative purposes.

A fundamental difference was found in the type of medical care provided for patients with cerebral palsy in urban and rural areas. For example, while 46 per cent of patients in urban areas were under the care of a medical specialist, only 34 per cent of rural patients were receiving such care. Disparities were evident in such medical specialties as pediatrics, orthopedic surgery, ophthalmology, and otology. Whereas 77 per cent of urban patients had been seen by a dentist in the previous year, only 64 per cent of rural patients had done so. This disparity also applied to therapy services, as evidenced by the following:

	Urban	Rural
Received physical therapy	79.9%	68.5%
Received occupational therapy	43.5%	18.9%
Received speech therapy	46.0%	28.7%
Received no therapy	12.9%	22.8%

Forty per cent of children of school age in rural areas were not attending school, in contrast to 31.5 per cent in urban areas. Almost three-quarters of the rural children in school were in regular classes, in contrast to almost half of the urban group in a special day school. While the number of patients receiving vocational assistance was small, nevertheless, this percentage for urban patients (11.8 per cent) was almost twice as high as rural patients (6.6 per cent). Ninety five percent of the rural patients were not employed, in contrast to 88 per cent in the urban group. Differences between the two groups are clear.

SUGGESTIONS

To promote the further extension of community health services for handicapped children, the following suggestions are made:

1. Further broadening of the definition of a handicapped child is necessary so that all State Crippled Children's Programs will include all children with all types of long term conditions.

2. Further efforts are necessary to improve the quality of care for handicapped children. Standards need to be established and consultants should be employed to work with the State programs and participating physicians and hospitals to improve the quality of care.

3. Intensive efforts are needed to remedy the disparity in the care of handicapped children between urban and rural areas. Regional planning is necessary so that there may be inter-county and intercommunity services to reach children in rural areas.

MIGRANT FAMILIES

Migrant families represent one of the more disadvantaged groups in rural areas. It has been estimated that the total migrant work force consists of about one-half million people. There are about 350,000 - 450,000 children under 18 years of age of migrant families, of whom about one-third accompany their families. The migrant family is characterized by low income, high mobility, and less education and training. Children are not infrequently employed illegally.

There are special health problems and needs among mothers and children of migrant families. 29/ Infant mortality rates have been reported three

times as high among them as in nearby urban areas. Maternal mortality rates are high. Migrant mothers nearly always work in the fields; small children are taken to the fields early in the morning, spend long hours in locked cars, play in roadways or drainage ditches. There may be hazardous conditions such as danger from cars, trucks, farm machinery, insecticides, excessive exposure to the sun, or heavily traveled roads. Accident hazards are common, often resulting from inadequate transportation. Day care is usually not available to children. They may be locked in hot cabins all day, with little or no supervision. Housing may be poor and unsafe; there may be poor cooking facilities, little or no refrigeration, poor sanitary conditions, including sewage disposal, water supply, and garbage disposal.

Children often go hungry, are undernourished, and have anemia. Diarrhea and parasitic infections are not uncommon. Eye and ear infections, and the communicable diseases of childhood occur frequently. The immunization rate among children of migrant families is low. There is a higher frequency of positive reactions to the tuberculin test, indicating exposure to individuals with active tuberculosis. Dental disease is common.

One of the underlying problems is the lack of available health, medical and hospital services and care to migrant families. Reasons for this include the lack of such services generally; residence requirements which prevent migrant families from using existing services; and lack of knowledge for securing care. In any event, the end result is the same -- the need for assistance in securing preventive health services, the problem of delayed medical and health care of pregnant women, infants, and children, and the problem of paying medical and hospital bills. As examples, a large proportion of pregnant women receive no prenatal care, and have inadequate delivery and postpartum care. Because of the problem of medical care, there is delay in children receiving diagnostic and treatment services; not infrequently children are seldom seen early in their illnesses.

SUGGESTIONS

While the new Migrant Health Act of 1962 is an initial step in the right direction, much needs to be done in careful planning and the development of sound community health services to implement it. Suggestions include:

1. Of great importance is the need to remove residence requirements to make health, education, welfare, and rehabilitation services easily available and used by migrant families.

2. Housing and other environmental aspects of living must be improved, including cooking facilities, refrigeration, water supply, sewage and refuse disposal, and the removal of accident hazards.

3. Day care programs, including health and nutritional aspects should be developed.

4. Assistance should be made available for meeting the cost of medical and hospital care.

5. Special clinics should be established and, where indicated, especially at night. Family clinics have been successful. Clinic services necessary include provision for maternity care, well child supervision, services for handicapped children, immunization.

6. Provisions need to be made for additional health staff, including physicians, public health nurses, nutritionists, and social workers.

7. There is need for classes in health instruction for adults.

8. Ways need to be developed to use a health record form and transfer this health information from one area to another when the migrant family moves.

AMERICAN INDIAN FAMILIES

Indians of the United States today have health programs resembling in many respects those of the general population of the Nation a generation ago. Thus, they represent a disadvantaged group in today's society. Inadequate health services partly explain the present depressed condition of Indian health. Lack of health services, however, is not alone responsible for poor health among Indians. Substandard and overcrowded housing and lack of adequate sanitary facilities have been among the factors promoting disease. Often water is scarce and from contaminated sources. Indian reservations typically are in remote and sparsely settled areas. The education and family income levels are low. The total identified Indian population in continental United States was estimated at 472,000 in 1955, half of whom are less than 20 years of age. 30/

Mortality rates among Indian mothers, children,and youth were 2 to 5 times those for the United States as a whole approximately a decade ago. 31/ The high maternal mortality rate in Indian women was associated with toxemia, hemorrhage, and infection, all of them preventable causes. At that time the death rate for Indian women from hemorrhage was four and one-half times that for the total population.

The high infant mortality rate among Indians is due primarily to the much higher risk at ages 7 to 27 days and 28 days to 11 months, compared with the total population in the United States. It was associated with pneumonia and influenza, gastroenterities, infectious and parasitic diseases, and accidents, all related to the home environment and all considered preventable.

One other major cause of death among the Indians of significance to mothers and children is tuberculosis. Other major health problems include venereal diseases, trachoma, vision and hearing impairment, anemia, and congenital dislocation of the hip among the Navajo and Apache tribes of the Southwest.

Table 3. MORTALITY RATES AMONG AMERICAN INDIANS*

	Indians	United States
Maternal Mortality /10,000	23	7.5
Infant Mortality /1,000	77.9	32.7
1 - 4 years	7.0	1.4
5 - 9 years	1.3	0.6
10 - 14 years	1.0	0.6
15 - 19 years	2.6	1.1
20 - 24 years	4.0	1.5

* All rates for the Indians are for 1951-53, except for maternal mortality which is for 1949-53. All rates for the United States are for 1952, except for maternal mortality which is for 1951.

Source: Public Health Service. Health Services for American Indians. U.S. Government Printing Office, Washington, D.C. 1957. 344 pages.

Discharge diagnoses for Indian children under 15 years of age in small general Indian hospitals in the Albuquerque area (includes New Mexico, Arizona, Colorado, and Utah) showed that influenza and pneumonia (19.6 per cent), gastroenteritis (13.3 per cent), other respiratory conditions (11.1 per cent), infective and parasitic conditions (10.0 per cent), accidents (8.3 per cent), and eye and ear conditions (5.2 per cent) were among the major causes of hospitalization of children in 1957. In individuals over 15 years of age, maternity care accounted for 35.9 per cent of all hospital discharges in 1957. Deaths in infants and children from 0 to 19 years of age accounted for 51 per cent of all deaths in the Indian group in the Albuquerque area. It was found that 20 per cent of the 15 to 19 year group, 18 per cent of the 10 to 14 year group, and 13 per cent of the 5 to 9 year group of 1,124 children surveyed at the Navajo School in 1958 and 1959 had trachoma. In Tuba City, 8 per cent of pregnant women registered for prenatal care in the first trimester of pregnancy, 17 per cent in the second trimester, 40 per cent in the third trimester and 35 per cent had no prenatal care in 1958. Only 8 per cent of women returned for postpartum care.

SUGGESTIONS

Major recommendations made by the U.S. Public Health Service expert group in the survey of Indian Health conducted in 1955 include the following: 32/

1. There is great need for combining preventive and curative services by extending and improving medical services, diagnostic equipment, and expanding field health units. More clinic services and home visits were recommended. Family care clinics, providing both preventive and curative services, were advised. Ambulance services are necessary. Supplies and equipment for emergency obstetrical services are needed.

2. The need for improving the quality of hospital care in Indian hospitals for mothers and children is urgent.

3. Consultation services in pediatrics from medical centers should be made available to health centers and hospitals periodically to provide clinical consultation on groups of patients.

4. Ways must be devised to provide continuity of care between hospitals and clinics and the home.

5. The nutritional status of infants, children, and adults must be improved.

6. Organized social welfare services are needed.

7. There is need to coordinate health services of the Indian Health Service with community health and welfare services.

8. Further training of health personnel, both in-service and formal academic training, are necessary.

Mothers, children, and youth in rural areas are in a disadvantaged position, as compared with those in urban areas, with respect to health status and health care. In spite of the increased emphasis given to mothers and children in rural areas under Title V of the Social Security Act, this disparity continues to exist. The rural emphasis presently contained in Title V of the Social Security Act should be continued. More funds, a larger pool of trained personnel, and continued sound planning at State and regional levels within each State are essential, if further progress in the care of mothers, children and youth in rural areas is to be achieved. The continued high birth rate and the increase in the childhood population mean that merely to proceed at the present level of services in the long run will actually result in a step backward. Expansion of existing services and development of additional services are essential if we are to be able to keep up with the increase in the childhood population and with new knowledge.

FOOTNOTES

1. Lunde, A., Ortmeyer, C., and Huyck, E. "Trends in Marriages, Births and Population." Indicators (published by the U. S. Department of Health, Education and Welfare, Washington, D. C.), March, 1963.

2. Adams, H. M. and Gallagher, U. M. "Some Facts and Observations about Illegitimacy." Children, March-April, 1963, 10, 43-48.

3. The President's Panel on Mental Retardation. Report to the President. A Proposed Program for National Action to Combat Mental Retardation, Washington, D. C.: U. S. Government Printing Office, October, 1962.

4. American College of Obstetricians and Gynecologists. Manual of Standards in Obstetric-Gynecologic Practice, Chicago, Illinois: 1959, 56 pp.

5. Committee on Fetus and Newborn, American Academy of Pediatrics. Standards and Recommendations for Hospital Care of Newborn Infants. Evanston, Illinois: 1957, 144 pp.

6. Fritz, W. "Eastern Shore Family Planning Project." Paper presented at the Annual Meeting of the American Public Health Association, October 17, 1962.

7. Barno, A., Freeman, D. W., and Bellville, T. P. "Minnesota Maternal Mortality Study." Obstetrics and Gynecology, March, 1957, 9, pp. 336-344.

8. Knudsen, H. L., Rosenfield, A. B. and Lundgaard, M. J. "Obstetrical Analgesia and Anesthesia Services in Minnesota Hospitals." Minnesota Medicine, April, 1962, pp. 391-397.

9. Donnelly, M. M. "Obstetrical Anesthesia in Iowa." Journal of the Iowa State Medical Society, August, 1960, pp. 492-498.

10. Donnelly, M. M. "Prenatal Care in Iowa." Bulletin of Maternal Welfare. January-February, 1957.

11. Yankauer, A. and Allaway, N. C. "An Analysis of Hospital Neonatal Mortality Rates in New York State." AMA Journal of Diseases of Children, March, 1958, 95, pp. 240-244.

12. Shackelford, J. H., Russell, G. R., and Shackelford, M. F. "Perinatal Mortality Rates in Oklahoma Hospitals." Journal of the Oklahoma State Medical Association, October, 1959, pp. 663-670

13. California State Department of Health. Health Supervision of Young Children in California. 1960. Berkeley, California: 1960, 134 pp.

14. Public Health Service. Children and Youth-Selected Health Characteristics. Health Statistics from the U. S. National Health Survey, Washington, D. C: U. S. Government Printing Office, 1959, 43 pp.

15. American Academy of Pediatrics. Child Health Services and Pediatric Education. New York: Commonwealth Fund, 1949, 270 pp.

16. Selective Service System. Physician Examinations of Selective Service Registrants in the Final Months of the War. Medical Statistics Bulletin No. 4., Washington, D. C.: June 1, 1946, 102 pp.

17. Silverman, Leo. "The School's Responsibility in the Health of the Nation." Speech given at the Annual Meeting of the California School Health Association, November, 1962.

18. Deisher, R. W. and Mills, C. A. "The Adolescent Looks at his Health and Medical Care." Paper presented at the Annual Meeting of the American Public Health Association, October 17, 1962.

19. Public Health Service. VD Chart Series. Washington, D. C.: U. S. Government Printing Office. June, 1962.

20. Children's Bureau. Maternal and Child Health Services. 1959. Children's Bureau Statistical Series 62. U. S. Government Printing Office, Washington, D. C.: 1961, 30 pp.

21. Montgomery, T. A. "Health Appraisal of School Children in a Rural Area." California's Health, December 15, 1960, 18, 89-91 pp.

22. Wallace, H. M., et. al. "The Austin School Health Study." American Journal of Public Health, February, 1962, 52, 293-296 pp.

23. Public Health Service. Health Statistics from the U. S. National Health Survey. Persons Injured in the Home and Associated Disability. United States, July 1959-June 1961. U. S. Government Printing Office, Washington, D. C.: January, 1963, 45 pp.

24. Morgan, Agnes F. (ed.) University of California Division of Agricultural Science. Nutritional Status of the USA Bulletin 769. University of California Division of Agricultural Sciences, 1959, 130 pp.

25. Stearns, G. "Nutritional State of the Mother Prior to Conception." Journal of the American Medical Association, November 22, 1958, 168, 1655-1659.

26. Children's Bureau. Program Trends in Crippling Conditions, 1950-1960. Children's Bureau Statistical Series 67. Washington, D. C.: U. S. Government Printing Office, 1962, 40 pp.

27. Public Health Service. Children and Youth, Op. Cit.

28. Wallace, H. M., Meinert, C. L. and Englund, P. J. A Study of Cerebral Palsy, 1962. Available from the United Cerebral Palsy of Minnesota, St. Paul, Minnesota, 158 pp.

29. Children's Bureau. Children in Migrant Families. A Report to the Committee on Appropriations, United States Senate, Washington, D. C.: U. S. Government Printing Office, 1961, 61 pp.

30. Public Health Service. Health Services for American Indians. Washington, D. C.: U. S. Government Printing Office, 1957, 344 pp.

31. Ibid.

32. Ibid.